Side by Side Refrigerator —Technical Information

JS42CSD*, JS42CSF*, JS42FBD*, JS42FBF*, JS42FSD*, JS42FSF*, JS42FWD, JS42FWF, JS42SED*, JS42SEF*, JS48CSD*, JS48CSF*, JS48FBD*, JS48FBF*, JS48FSD*, JS48FSF*, JS48FWD, JS48FWF, JS48SED*, JS48SEF*, RJRS4270A, RJRS4280A, RJRS4870A, RJR4880A, RJRS4271A, RJRS4272A, RJRS4281A, RJRS4282A, RJRS4871A, RJRS4872A, RJRS4881A, RJRS4882A

- Due to a possibility of personal injury or property damage, always contact an authorized technician for service or repair of this refrigerator.
- Refer to Service Manual 16021730 for installation, operating, disassembly, icemaker, testing, and troubleshooting information.

⚠ CAUTION

All safety information must be followed as provided in Service Manual 16021730.

⚠ WARNING

To avoid risk of electrical shock that can cause death or severe personal injury, disconnect unit from power before servicing unless testing is required. Discharge capacitors through a 10,000 ohm resistor before handling. Wires removed during disassembly must be replaced on correct terminals to ensure proper grounding and polarization.

No-Load Performance, Controls in Normal Position

	Kw/24 hr ±0.4		Percent Run Time ±10%		Cycles/24 hr ±25%		Refrigerator Center Compartment Average Food Temperature ±1ºF		Freezer Compartment Average Food Temperature ±3ºF	
Ambient ºF	70°	90°	70°	90°	70°	90	70°	90°	70°	90°
42 inch	1.6	2.4	60	70	35	30	37	37	0	0
48 inch	1.7	2.8	60	70	35	30	37	37	0	0

Temperature Relationship Test Chart

	Evaporator Outlet ±3ºF		Evaporator Inlet ±3ºF		Average Total Wattage ±10%		Suction Pressure ±2 PSIG		Head Pressure ± 5 PSIG	
Ambient ºF	70°	90°	70°	90°	70°	90°	70°	90°	70°	90°
42 inch	-23	-10	-23	-10	80 to 220	85 to220	-5 to+2.	-3 to +3	80 to 95	115 to 140
48 inch	-23	-10	-23	-10	80 to 220	85 to220	-5 to+3.	-3 to +4	81 to 95	116 to 140

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Diagnostic Procedure

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*** Software Revision**

Diagnostic Control Mode

Unit always start in normal operation or showroom mode. To get into "mode selection" with fresh food door open and the *fresh food door switch taped in the closed position*, press "Power Interrupt" 3 times. Display will show "Current Mode". Use the FZ up & down selector to change mode selection.

PI - POWER Interrupt
FU - Freezer Up
FD - Freezer Down

MODE
NO
NORMAL OPERATION

Unit Performs in normal operating mode according to the product specifications

MODE
SH
SHOW ROOM MODE

Disables the refrigeration systems and fans. Customer interface keypads and displays continue in normal operation

Note: If the unit is turned off and both doors are closed the unit will turn back on.

MODE
SE
MANUAL

Service Test
00
Enter / Exit

PI-Start and Stop Test
Used to enter and leave the manual service test mode. The unit will stop all normal functions and only operate the loads or sensors for each individual test period manually initiated.

Service Test
01
Software Revision

PI-Start and Stop Test
Will display the software release version (As found at top of page)

Note: You can move through the service modes by 10 modes at a time using the Fresh Food Up & Down Keypads

Service Test
02
High Ambient
Override

PI- Set & Un-Set override
Some performance characteristics of the unit are altered in high abient temperatures. These performance characteristic changes can be overridden by setting this override flag. When the flag is set, the Filter Status Indicator will illuminate the WORKING lamp.

Service Test
03
Fresh Food
Thermistor

PI-Start & Stop Test
Display
PA - TESTED PASSED
SH - SHORTED THERMISTOR
OP - OPEN THERMISTOR INPUT

Measure thermistor ohms at connector JP2-3,4 with JP2 removed. If open or short circuit check thermistor part at terminals in FF compartment. If part is good, debug wire harness.

OUT

*** See Diagnostic supplied with the product for the latest revision.**

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Diagnostic Procedure

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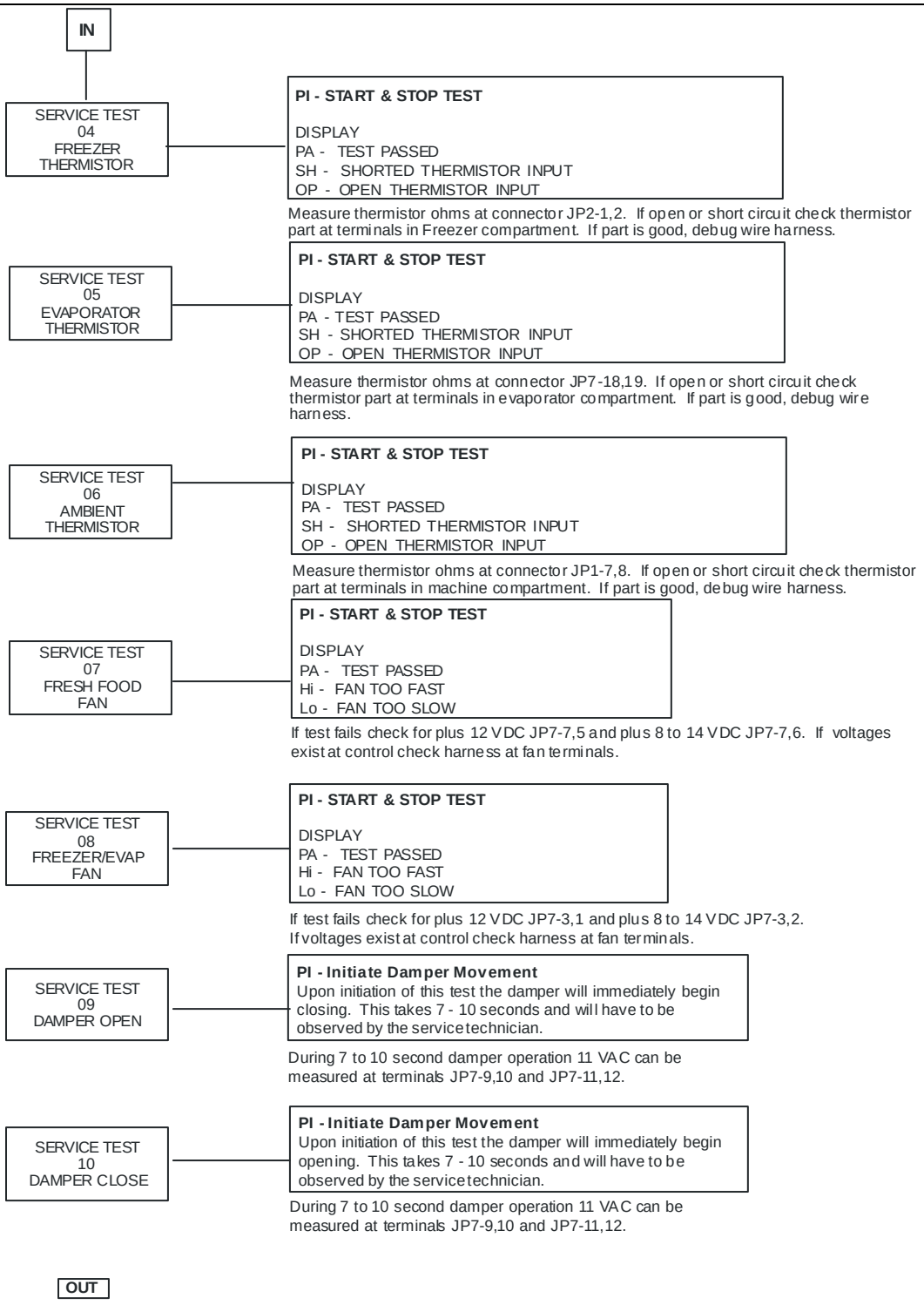
IN
SERVICE TEST 04 FREEZER THERMISTOR
PI - START & STOP TEST
DISPLAY
PA - TEST PASSED
SH - SHORTED THERMISTOR INPUT
OP - OPEN THERMISTOR INPUT
Measure thermistor ohms at connector JP2-1,2. If open or short circuit check thermistor part at terminals in Freezer compartment. If part is good, debug wire harness.
SERVICE TEST 05 EVAPORATOR THERMISTOR
PI - START & STOP TEST
DISPLAY
PA - TEST PASSED
SH - SHORTED THERMISTOR INPUT
OP - OPEN THERMISTOR INPUT
Measure thermistor ohms at connector JP7-18,19. If open or short circuit check thermistor part at terminals in evaporator compartment. If part is good, debug wire harness.
SERVICE TEST 06 AMBIENT THERMISTOR
PI - START & STOP TEST
DISPLAY
PA - TEST PASSED
SH - SHORTED THERMISTOR INPUT
OP - OPEN THERMISTOR INPUT
Measure thermistor ohms at connector JP1-7,8. If open or short circuit check thermistor part at terminals in machine compartment. If part is good, debug wire harness.
SERVICE TEST 07 FRESH FOOD FAN
PI - START & STOP TEST
DISPLAY
PA - TEST PASSED
Hi - FAN TOO FAST
Lo - FAN TOO SLOW
If test fails check for plus 12 VDC JP7-7,5 and plus 8 to 14 VDC JP7-7,6. If voltages exist at control check harness at fan terminals.
SERVICE TEST 08 FREEZER/EVAP FAN
PI - START & STOP TEST
DISPLAY
PA - TEST PASSED
Hi - FAN TOO FAST
Lo - FAN TOO SLOW
If test fails check for plus 12 VDC JP7-3,1 and plus 8 to 14 VDC JP7-3,2. If voltages exist at control check harness at fan terminals.
SERVICE TEST 09 DAMPER OPEN
PI - Initiate Damper Movement
Upon initiation of this test the damper will immediately begin closing. This takes 7 - 10 seconds and will have to be observed by the service technician.
During 7 to 10 second damper operation 11 VAC can be measured at terminals JP7-9,10 and JP7-11,12.
SERVICE TEST 10 DAMPER CLOSE
PI - Initiate Damper Movement
Upon initiation of this test the damper will immediately begin opening. This takes 7 - 10 seconds and will have to be observed by the service technician.
During 7 to 10 second damper operation 11 VAC can be measured at terminals JP7-9,10 and JP7-11,12.
OUT

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Diagnostic Procedure

⚠ WARNING

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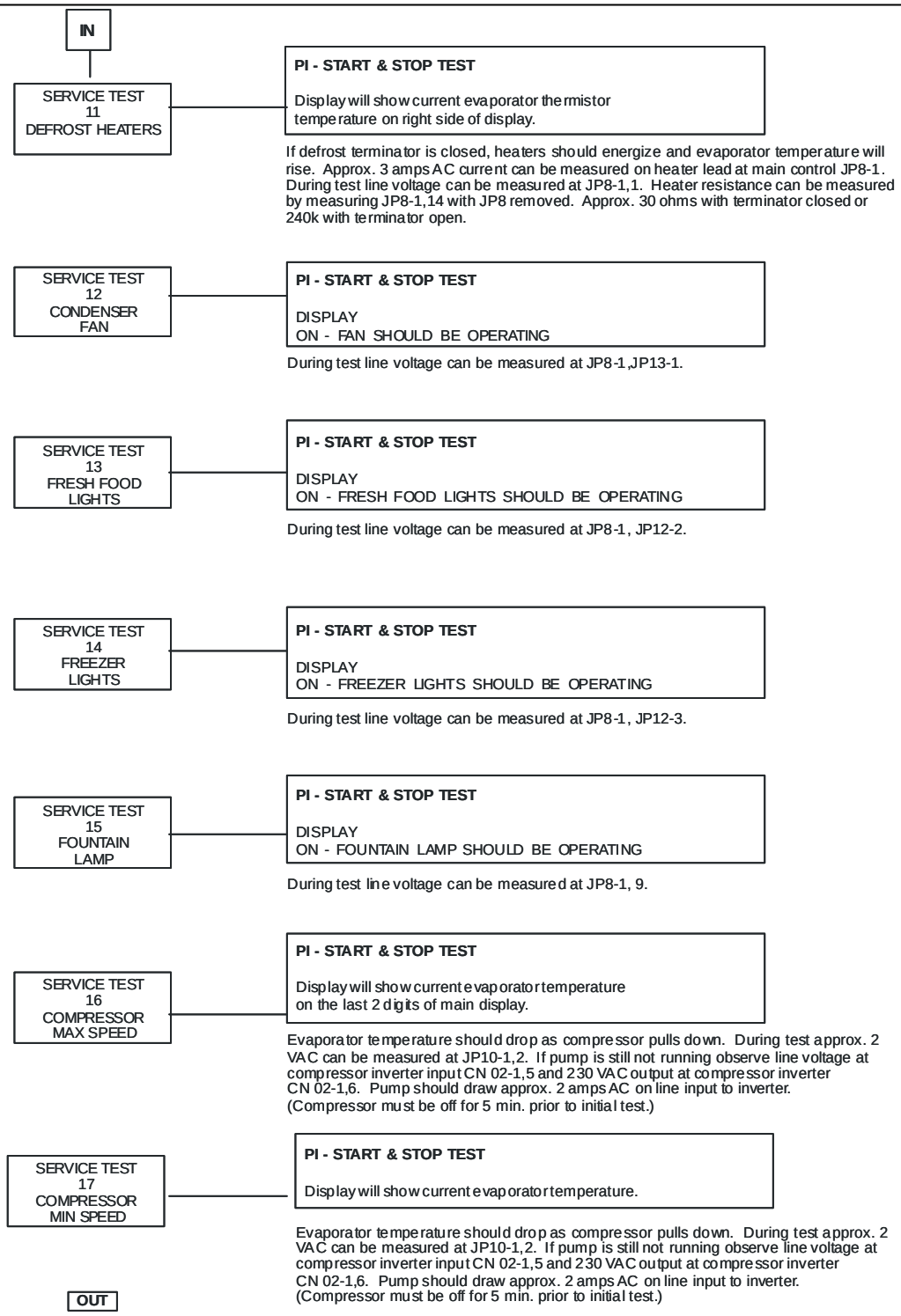
IN
SERVICE TEST 11 DEFROST HEATERS
PI - START & STOP TEST
Display will show current evaporator thermistor temperature on right side of display.
If defrost terminator is closed, heaters should energize and evaporator temperature will rise. Approx. 3 amps AC current can be measured on heater lead at main control JP8-1. During test line voltage can be measured at JP8-1,1. Heater resistance can be measured by measuring JP8-1,14 with JP8 removed. Approx. 30 ohms with terminator closed or 240k with terminator open.
SERVICE TEST 12 CONDENSER FAN
PI - START & STOP TEST
DISPLAY
ON - FAN SHOULD BE OPERATING
During test line voltage can be measured at JP8-1 ,JP13-1.
SERVICE TEST 13 FRESH FOOD LIGHTS
PI - START & STOP TEST
DISPLAY
ON - FRESH FOOD LIGHTS SHOULD BE OPERATING
During test line voltage can be measured at JP8-1, JP12-2.
SERVICE TEST 14 FREEZER LIGHTS
PI - START & STOP TEST
DISPLAY
ON - FREEZER LIGHTS SHOULD BE OPERATING
During test line voltage can be measured at JP8-1, JP12-3.
SERVICE TEST 15 FOUNTAIN LAMP
PI - START & STOP TEST
DISPLAY
ON - FOUNTAIN LAMP SHOULD BE OPERATING
During test line voltage can be measured at JP8-1, 9.
SERVICE TEST 16 COMPRESSOR MAX SPEED
PI - START & STOP TEST
Display will show current evaporator temperature on the last 2 digits of main display.
Evaporator temperature should drop as compressor pulls down. During test approx. 2 VAC can be measured at JP10-1,2. If pump is still not running observe line voltage at compressor inverter input CN 02-1,5 and 230 VAC output at compressor inverter CN 02-1,6. Pump should draw approx. 2 amps AC on line input to inverter. (Compressor must be off for 5 min. prior to initial test.)
SERVICE TEST 17 COMPRESSOR MIN SPEED
PI - START & STOP TEST
Display will show current evaporator temperature.
Evaporator temperature should drop as compressor pulls down. During test approx. 2 VAC can be measured at JP10-1,2. If pump is still not running observe line voltage at compressor inverter input CN 02-1,5 and 230 VAC output at compressor inverter CN 02-1,6. Pump should draw approx. 2 amps AC on line input to inverter. (Compressor must be off for 5 min. prior to initial test.)
OUT

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Diagnostic Procedure

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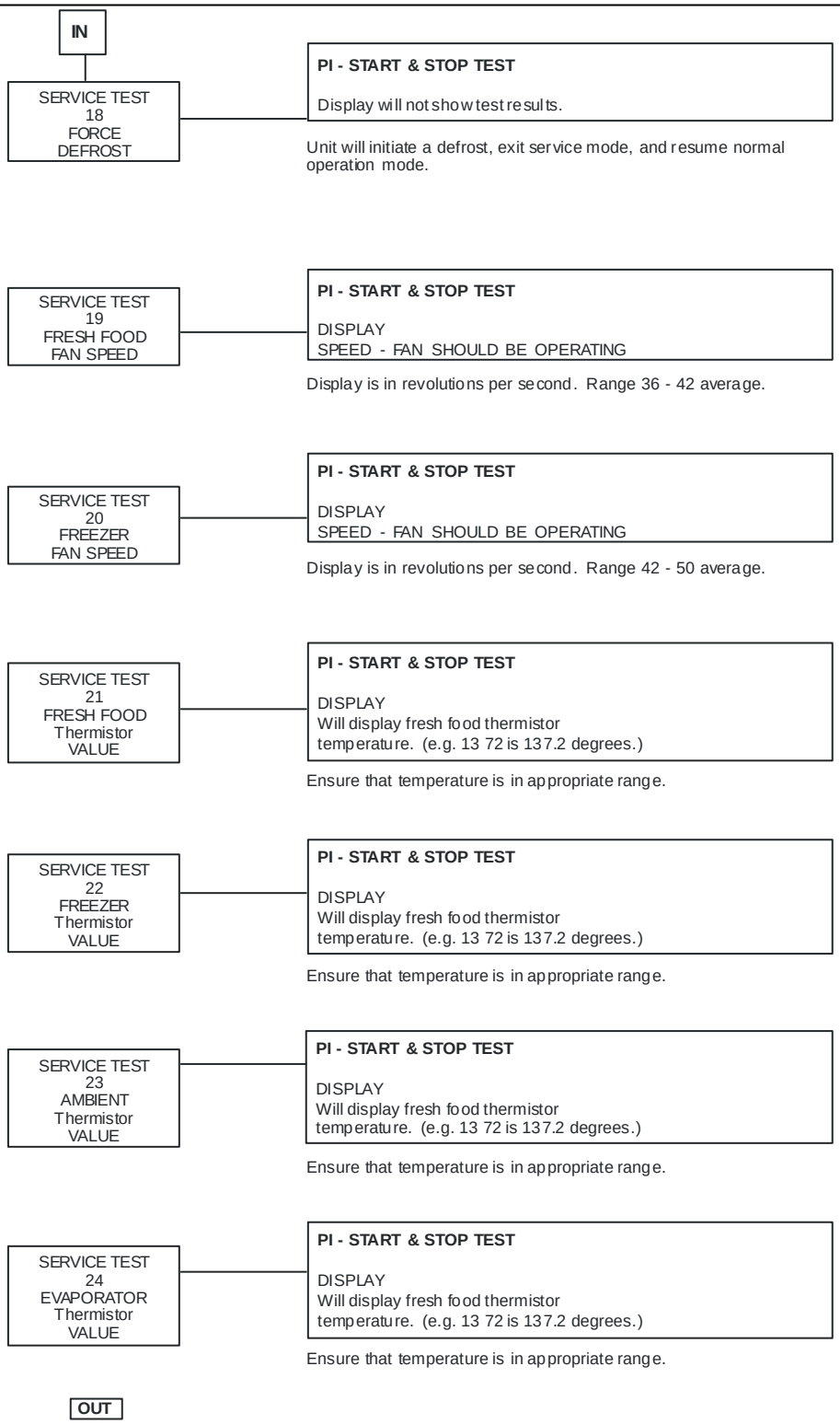
IN
SERVICE TEST 18 FORCE DEFROST
PI - START & STOP TEST
Display will not show test results.
Unit will initiate a defrost, exit service mode, and resume normal operation mode.
SERVICE TEST 19 FRESH FOOD FAN SPEED
PI - START & STOP TEST
DISPLAY SPEED - FAN SHOULD BE OPERATING
Display is in revolutions per second. Range 36 - 42 average.
SERVICE TEST 20 FREEZER FAN SPEED
PI - START & STOP TEST
DISPLAY SPEED - FAN SHOULD BE OPERATING
Display is in revolutions per second. Range 42 - 50 average.
SERVICE TEST 21 FRESH FOOD Thermistor VALUE
PI - START & STOP TEST
DISPLAY
Will display fresh food thermistor temperature. (e.g. 13 72 is 137.2 degrees.)
Ensure that temperature is in appropriate range.
SERVICE TEST 22 FREEZER Thermistor VALUE
PI - START & STOP TEST
DISPLAY
Will display fresh food thermistor temperature. (e.g. 13 72 is 137.2 degrees.)
Ensure that temperature is in appropriate range.
SERVICE TEST 23 AMBIENT Thermistor VALUE
PI - START & STOP TEST
DISPLAY
Will display fresh food thermistor temperature. (e.g. 13 72 is 137.2 degrees.)
Ensure that temperature is in appropriate range.
SERVICE TEST 24 EVAPORATOR Thermistor VALUE
PI - START & STOP TEST
DISPLAY
Will display fresh food thermistor temperature. (e.g. 13 72 is 137.2 degrees.)
Ensure that temperature is in appropriate range.
OUT

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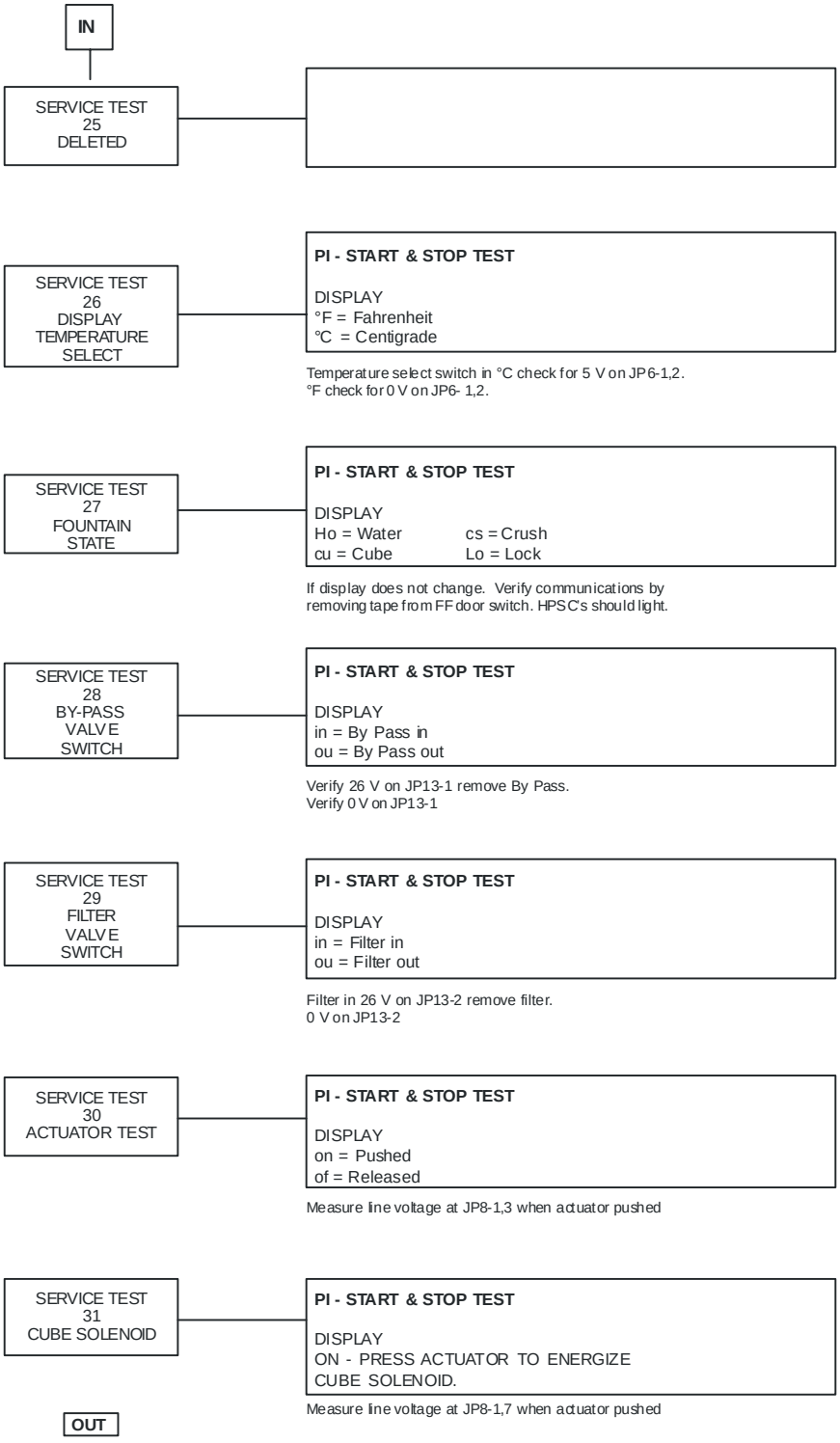
IN
SERVICE TEST 25 DELETED
SERVICE TEST 26 DISPLAY TEMPERATURE SELECT
PI - START & STOP TEST
DISPLAY
°F = Fahrenheit
°C = Centigrade
Temperature select switch in °C check for 5 V on JP6-1,2.
°F check for 0 V on JP6- 1,2.
SERVICE TEST 27 FOUNTAIN STATE
PI - START & STOP TEST
DISPLAY
Ho = Water cs = Crush
cu = Cube Lo = Lock
If display does not change. Verify communications by removing tape from FF door switch. HPSC's should light.
SERVICE TEST 28 BY-PASS VALVE SWITCH
PI - START & STOP TEST
DISPLAY
in = By Pass in
ou = By Pass out
Verify 26 V on JP13-1 remove By Pass.
Verify 0 V on JP13-1
SERVICE TEST 29 FILTER VALVE SWITCH
PI - START & STOP TEST
DISPLAY
in = Filter in
ou = Filter out
Filter in 26 V on JP13-2 remove filter.
0 V on JP13-2
SERVICE TEST 30 ACTUATOR TEST
PI - START & STOP TEST
DISPLAY
on = Pushed
of = Released
Measure line voltage at JP8-1,3 when actuator pushed
SERVICE TEST 31 CUBE SOLENOID
PI - START & STOP TEST
DISPLAY
ON - PRESS ACTUATOR TO ENERGIZE CUBE SOLENOID.
Measure line voltage at JP8-1,7 when actuator pushed
OUT

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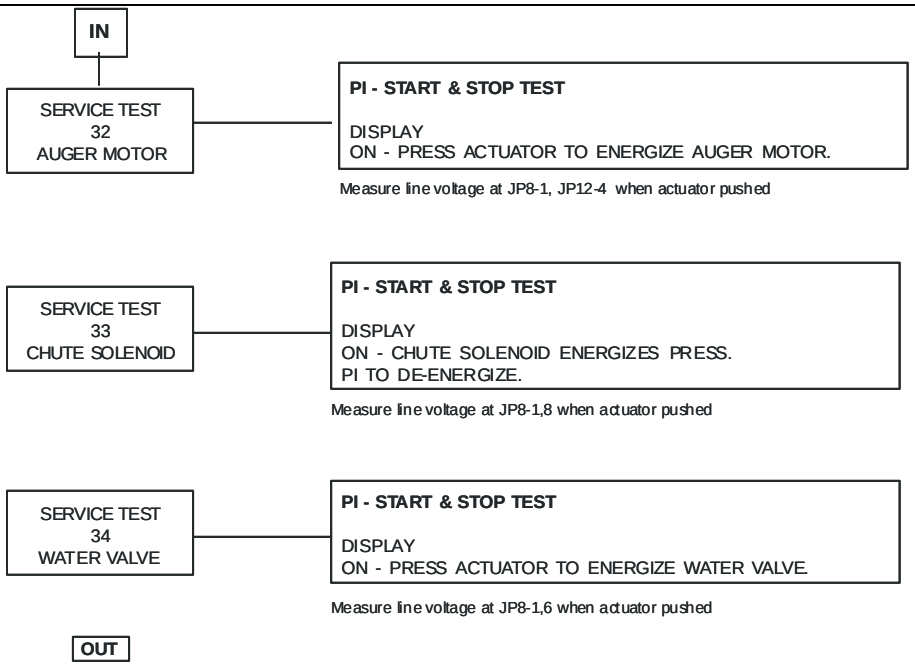

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Wiring Diagram

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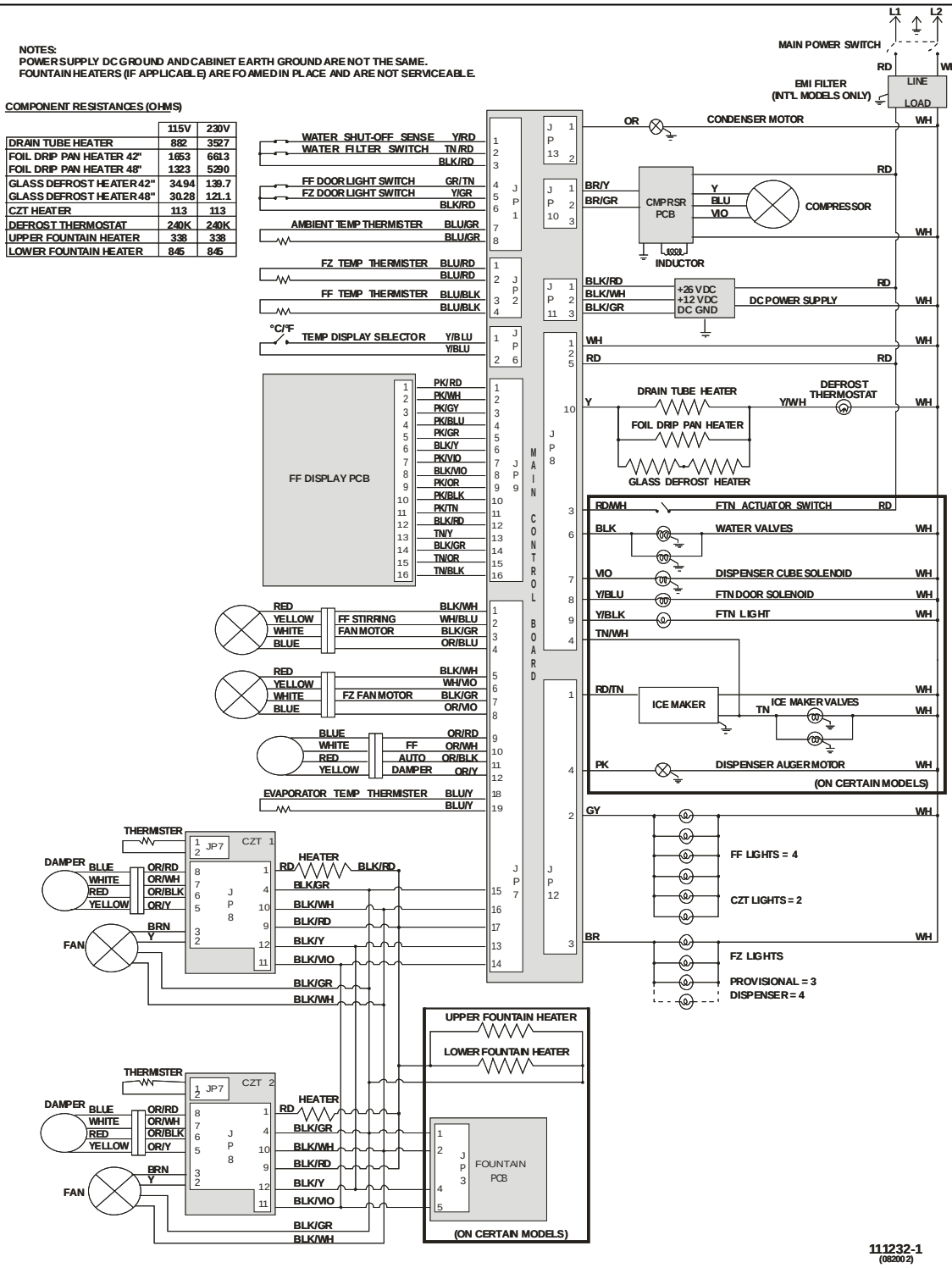

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